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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/516,078

06/30/2005

Hermann Bodinger

4001-1190

8279

466

7590

07/20/2009

YOUNG & THOMPSON

209 Madison Street

Suite 500

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EXAMINER

KOSLOW, CAROL M

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

07/20/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/516,078	<b>Applicant(s)</b> BODINGER ET AL.	
	<b>Examiner</b> C. Melissa Koslow	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6, 10-21 and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-21 and 25-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/17/09</u> .   | 6) <input type="checkbox"/> Other: _____                          |

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This action is in response to applicants' amendment of 21 May 2009. Applicants argument with respect to the amount of a with respect to the teachings on page 3, lines 20-25 has overcome the 35 USC 112, first paragraph new matter rejection over claim 1. Applicant's arguments have been fully considered but they are not persuasive.

The disclosure is objected to because of the following informalities:

The upper limit of x and y are not given and cannot be determined for the information disclosed in the specification. Page 8, lines 12-13 teach in one embodiment,  $x+y+z=1$ , which indicates that applicant intends for the inventive composition to include compositions where  $x+y+z$  is not equal to 1. In addition, the specification teaches the composition can be non-stoichiometric, which means  $x+y+z$  need not equal to 1. Therefore it is unclear what x and y ranges applicant considers as his invention. The definition of a is not given in the specification. While it is known that a cannot equal 1, it is not clear as to what a range applicants actual consider as their invention. Appropriate correction is required.

Applicants argue that the fact the claims now state " $x+y+z=1$ " overcomes this objection. The fact the new dependent claim 25 and new independent claims 26 and 28 include this limitation does not overcome the objection the specification since the upper limits of x and y are still not given and cannot be determined for the information disclosed in the specification. Applicants did not address the objection with respect to the actual a value range. The objections are maintained.

Claims 21 and 27 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to

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cancel the claims, or amend the claims to place the claims in proper dependent form, or rewrite the claims in independent form.

Claim 21 does not further limit claims 1 and 26 since all PZT piezoelectric compositions inherently have a morphotropic tetragonal rhomboidical phase boundary determined by the ratio of Zr and Ti.

Applicants' arguments have been considered but are not convincing since they do not address the actual objection. The Examiner did not say that all PZT compositions have a morphotropic tetragonal rhomboidical phase boundary as argued. The Examiner stated that all piezoelectric PZT ceramics compositions inherently have a morphotropic tetragonal rhomboidical phase boundary determined by the ratio of Zr and Ti. The objection is maintained.

Claims 12 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 12 and 13 teaches the metallization is selected from silver, copper, an alloy or silver/copper and alloys of silver/palladium; copper/palladium and silver/copper/palladium, where the amount of palladium in these alloys is greater than 0 up to 30%. Page 11 teaches the metallization can be silver, copper, an alloy, silver/copper or an alloy of silver and palladium, where the content of palladium is greater than 0 up to 30%. This does not support the claimed composition of alloys of copper/palladium and silver/ copper/palladium, where the amount of palladium in these alloys is greater than 0 up to 30%.

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Applicants did not argue the rejection over the subject matter of claims 12 and 13. The rejection is maintained.

Claims 1, 3-6, 10-21 and 25-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 26 and 28 indefinite since the variables a, x and y are not defined. Therefore the composition is not particularly pointed out and distinctly claimed. Claims 4-6, 10-21, 25 and 27 also do not give a definition for these variables and thus, since they depend from claim 1 or 26, they are also indefinite. Given the teachings on page 3, lines 20-25 that part of the A sites are occupied by part of the rare earth ions and the fact that the total amount of the rare earth ions is 0.2-3 mol%, it is clear that the value of a cannot be  $0 < a < 1$ . In the examples, it is clear that a is not the same as b, which is 0.02, and thus it is clear that not all of the rare earth ion replaces lead atoms. Given these teachings, while it is clear that a is greater than zero, the maximum value of a is undefined and there is no teaching or guidance in the specification as to the actual amount of lead substituted by the rare earth ion. The teaching in claim 1 that z is greater than b/2 or greater than b, does not define the maximum value of z. The teachings in claims 25, 26 and 28 that that z is greater than b/2 or greater than b and that  $x + y + z = 1$ , does not define the maximum value of z since the value ranges of x and y are not defined and thus one could not determine the value of z. While claim 3 does implicitly define z as being  $0.1 < z < 6$ , when  $b = 0.2$  and  $W_{TR} = 2$ ;  $1.5 < z < 6$ , when  $b = 3$  and  $W_{TR} = 2$ ;  $0.2 < z < 6$ , when  $b = 0.2$  and  $W_{TR} = 3$ ;  $3 < z < 6$ , when  $b = 3$  and  $W_{TR} = 3$ ; it does not define x and y and thus, since it depends from claim 1, it is also indefinite. Claims 25 and 26 are duplicate claims and thus are indefinite. Claims 27 and 28 are duplicate claims and thus are

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indefinite. Applicant is advised that should claims 26 and 28 be found allowable, claims 25 and 27 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Applicants argues that a, x and y are defined in claim 1, but this argument is not convincing since the actual values for these variables are not given in the claims. The rejections are maintained.

Applicant's amendments and arguments with respect to the 35 USC 112, first paragraph rejection over the value of "a" necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/cmk/  
July 20, 2009

/C. Melissa Koslow/  
Primary Examiner  
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